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METHOD AND SYSTEM FOR CLASSIFYING A SCENARIO**Abstract of the Disclosure**

Living cells can be used to identify or quantify bioactive conditions, including
5 without limitation, chemicals, biological pathogens, and environmental conditions, such
as pH, in samples based on changes in, for example, cell color, morphology and/or
physiology. Such changes can be directly detected or detected with the aid of
instrumentation. One embodiment of the method comprises exposing a system to a
bioactive condition, such as a chemical agent, a biological pathogen, an environmental
10 condition, such as pH, etc., and combinations of such conditions. The system then
exhibits a response to the bioactive condition. The response of the system, or a portion
thereof, to the bioactive condition is then represented, such as by digital images. The
method then involves attempting to classify a scenario by database comparison.
Classification can be in terms of numeric or non-numerical classifiers. Typically, the
15 system comprises living cells. Living cells useful for practicing the method experience
a detectable change in response to an interaction with a bioactive condition. A likely
living cell for use with the method and apparatus of the present invention is a
chromatophore. The present method has a number of uses, including classifying
unknown drug candidates, classifying unknown toxins, classifying chemical warfare
20 agents, etc. The method can be implemented using a computer program encoding the
method. Moreover, a computer-readable medium is described on which is stored a
computer program having instructions for executing the method. A cytosensor
apparatus also is described.